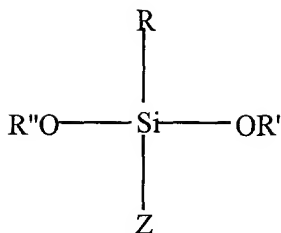


CLAIMS:

We claim:

1. A water-based gravure printing ink comprising:
 - (a) an aqueous emulsion of a silicone modified macromolecular resin binder that comprises the reaction product of an alkoxysilane and an aqueous emulsion polymer containing hydroxy functional groups, and
 - (b) pigment.
2. The ink of claim 1 wherein water is present in an amount of from 20 - 60 wt. % based on the weight of the ink.
3. The ink of claim 1 wherein the aqueous emulsion of the silicone modified macromolecular resin binder is present in an amount of from 20-70 wt. % based on the weight of the ink.
4. The ink of claim 1 wherein the macromolecular resin of the silicone modified macromolecular resin binder is selected from the group consisting of acrylic emulsion polymers prepared from monomers selected from the group consisting of acrylic acid esters, methacrylic acid esters, acrylic acid esters of polyhydric alcohols, methyl methacrylate, and vinyl acetate.
5. The ink of claim 4 wherein the aqueous emulsion of the silicone modified macromolecular resin is present in an amount of from 35-65 wt. % based on the weight of the ink.
6. The ink of claim 5 wherein the pigment is present in an amount of from 2 -45 wt. % based on the weight of the ink.
7. The ink of claim 1 wherein the macromolecular resin of the silicone modified macromolecular resin binder is a styrene/acrylic polymer and the alkoxysilane with which it is reacted is of the following formula:



wherein R is a cycloalkyl or an aryl group of 6 to 12 carbon atoms, R' and R'' are each independently an alkyl group of from 1 to 10 carbon atoms, and Z is an alkyl or alkoxy group of 1 to 10 carbon atoms.

8. The ink of claim 7 wherein R is a phenyl group, R' and R'' are each methyl groups, and Z is a methyl or methoxy group.

9. In a gravure printing process which uses a water – based ink, the improvement which comprises using as the water – based ink a composition comprising:

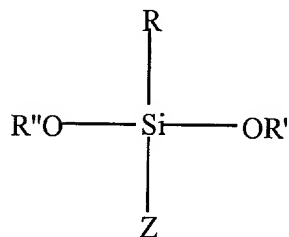
- (a) An aqueous emulsion of a silicone modified macromolecular resin binder that comprises the reaction product of an alkoxysilane and an aqueous emulsion polymer containing hydroxy functional groups, and
- (b) pigment.

10. The process of claim 9 wherein water is present in the ink in an amount of from 20 - 60 wt. % based on the weight of the ink.

11. The process of claim 10 wherein the aqueous emulsion of the silicone modified macromolecular resin binder is present in the ink in an amount of from 20-70 wt. % based on the weight of the ink.

12. The process of claim 11 wherein the macromolecular resin of the silicone modified macromolecular resin binder for the ink is selected from the group consisting of acrylic emulsion polymers prepared from monomers selected from the group consisting of acrylic acid esters, methacrylic acid esters, acrylic acid esters of polyhydric alcohols, methyl methacrylate, and vinyl acetate.

13. The process of claim 9 wherein the macromolecular resin of the silicone modified macromolecular resin binder for the ink is a styrene/acrylic polymer and the alkoxysilane with which it is reacted is of the following formula:



wherein R is a cycloalkyl or an aryl group of 6 to 12 carbon atoms, R' and R'' are each independently an alkyl group of from 1 to 10 carbon atoms, and Z is an alkyl or alkoxy group of 1 to 10 carbon atoms.

14. The process of claim 13 wherein R is a phenyl group, R' and R'' are each methyl groups, and Z is a methyl or methoxy group.